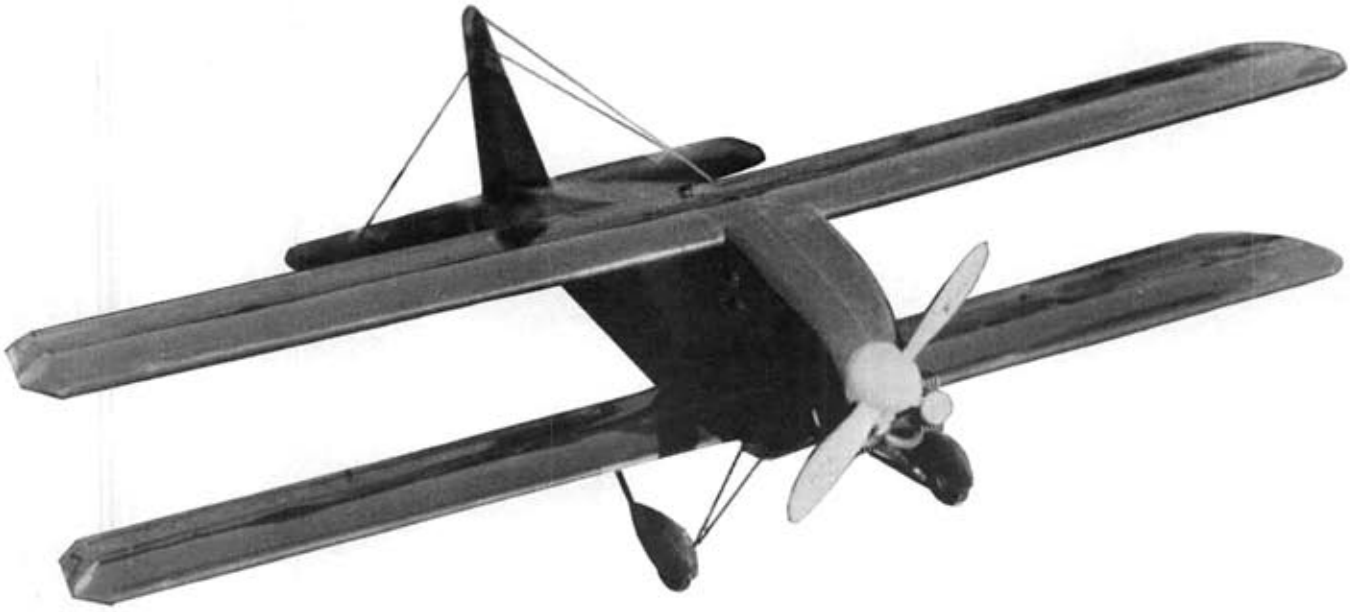

The Bitty-Bipe

By JIM "DOC" EDWARDS . . . The *Bitty-Bipe* is a fun-fly or sport airplane. What makes it interesting is it's outstanding aerobatic performance on rather small glow engines and the fact that it can be built in one weekend. So, get out the cyanoacrylate and dust off the workbench, your going to want this plan!

• As a biplane lover, this ship came to my mind when the super-small servos came out. However, it was not practical for me to buy five of them at that time just for this type of fun-fly airplane.

I drew the working drawings and built the airplane over one weekend, but as it was cold weather, didn't fly it until after April. The wait was worth it as its performance surprised me. It will perform all the FAI aerobatic figures on an O.S. Max .10 very well, except vertical roll, although I'm not suggesting you build it for competition, but for fun.

CONSTRUCTION

Pick your balsa carefully! Any airplane will perform better if it is built lightly, and *Bitty-Bipe* is no exception. Do not add any structure, as the design has very sufficient strength.

Also, I feel that having an aileron servo in each wing is a smaller penalty to pay than struts and slave links between the wings. The drag is tremendous from these hardware items.

Start by cutting all parts, and then proceed to build. I start with the wings, then the fuselage, and finally, the tail feathers. Don't forget the tail's flying wires! Use super glues and you can build this model without getting up from your bench . . . if your back holds out!

If you wish to round the fuselage corners more, add soft 1/8 balsa to the fuselage sides behind the wings. The strengtheners in the rear of the fuselage are simply 3/32 x 1/4 strips added to the sides. Fire wall width is two inches. Fuselage width at the rear of the wing is also two inches. Bend the rear of the fuselage together for the 1/4 square tailpost. Make sure fuselage is straight! Fit the horizontal fuselage members. Measure them for the natural curve which the sides take when bent together.

The cowling is made right on the fuselage after you determine how your engine will be mounted. Be sure to coat the inside of the cowl with epoxy to fuelproof it.

The wings are built flat on the plans, blocking up the T.E. of the ribs equally. Pin the bottom 3/16 hard balsa spar in position, make certain the butt joint is perfect. Add ribs, gluing as you proceed, then add the top 3/16 spar and 5/16 x 1/4 T.E. While still pinned to work table, cover the top of the wing forward of the spars with soft 1/16 sheet. Remove the wing from the plan and cover the bottom of wing as you did the top. Add the tips and ailerons (with aileron horns in place). You may beef up the aileron servo mount. If you wish, remembering that every piece you add adds weight.

Sand and cover the wings with your favorite heat-shrink film and hinge the ailerons. Now, build another wing exactly like the first, and the hardest parts are done.

The tail surfaces are built directly over the plan fron strip materials, and should be made warp-free.

Cover all parts and assemble the model so that everything is square and straight. Install the R/C equipment so that the balance point is where it is shown on the plans. You don't want to add nose weight to get the *Bitty-Bipe* to balance correcty.

The prototype flies well with an O.S. Max .10 Schneurle, as I stated . . . with a larger engine, who knows? Good luck with your *Bitty-Bipe*. •